

Appl. No. 10/659,447
Amdt. dated 11/05/2004
Reply to Office Action of 08/05/2004

REMARKS

This Amendment is in response to the Office Action mailed 08/05/2004. In the Office Action, the Examiner rejected claims 1, 6, 7, 9, 11-13, 15, 17-19, and 21 under 35 U.S.C. § 102, and rejected claims 2-5, 8, 10, 14, 16, 20, and 22 under 35 U.S.C. § 103. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Rejection Under 35 U.S.C. § 102

1. The Examiner rejects claims 1, 6, 7, 9, 11-13, 15, 17-19, and 21 under 35 U.S.C. § 102(b) as being anticipated by Bohan et al. (US 5,371,537). Applicant respectfully disagrees.

Bohan discloses the use of a single channel light meter that only provides a measurement of the light intensity. Col. 4, lines 33-49. Bohan does not disclose a sensor that provides "values responsive to chromaticity" as claimed.

As for claim 1, the Examiner asserts that Bohan discloses respective biases of each color channel are adjusted to reduce the difference between the value detected by the test patch and the target black level during a minimum intensity level at first (noting col. 5, line 65, to col. 6, line 1), thereby calibrating each channel. Applicant understands the cited portion to disclose that the light levels produced for a range of intensity inputs ranging from the minimum to the maximum digital input values are measured for each channel. Bohan then discloses that a video shaper curve is constructed from these values and used to map image intensity values onto the intensity values to be sent to the display as necessary to achieve the desired output. Col. 7, line 64, to col. 8, line 45. Nowhere does Bohan disclose "setting the bias of each color channel" as claimed. Indeed Bohan discloses that the desired lowlight (black) is set at code values greater than zero, typically 10, 10, 10 to allow the intensity input to be varied through the use of the video shaper to maintain the lowlight. Col. 4, lines 10-26. These same arguments apply to claims 11 and 17.

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As for claims 6, 12, and 18, the Examiner notes that Bohan discloses that the intensity level is increased from minimum to maximum for calibration using the test patch scanning. Applicant respectfully submits that Bohan does not disclose "setting the bias of each color channel to reduce the difference between a chromaticity of the target black point and the test patch" after "increasing the intensity input to a low intensity value for each color channel of the test patch portion." Bohan discloses neither setting the bias, reducing a chromaticity difference, nor measuring a test patch in which each color channel is at a non-zero value. Instead Bohan discloses that one color channel is ramped through a range of values while the remaining channel values are held at zero. Col. 7, lines 12-14.

As for claims 7, 13, and 19, the Examiner asserts that Bohan discloses measuring the white level using the test patch to further calibrate the intensity gain citing col. 4, lines 3-26. Applicant understands the cited portion to disclose that the desired highlight is set at code values somewhat less than the maximum. Nothing in Bohan discloses measuring a test patch in which each color channel is at the maximum value. Instead Bohan discloses that one color channel is ramped through a range of values while the remaining channel values are held at zero. Col. 7, lines 12-14. Nor does Bohan disclose setting the gain of each color channel as claimed.

As for claims 9, 15, and 21, the Examiner asserts that Bohan discloses using an alignment target to ensure correct sensor placement. Col. 6, lines 30-33. Applicant understands the cited portion to disclose providing a target that allows the sensor to be properly placed on the display screen. This is not what is claimed. This does not disclose "testing the values provided by the color calibration sensor to determine if the color calibration sensor is correctly coupled to the display screen." Bohan discloses an aid to correctly placing the sensor. The claim is directed to verifying that the placement is correct by testing the output of the sensor.

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Applicant respectfully requests that the Examiner withdraw the rejection of claims 1, 6, 7, 9, 11-13, 15, 17-19, and 21 under 35 U.S.C. § 102(b) as being anticipated by Bohan.

Rejection Under 35 U.S.C. § 103

2. The Examiner rejects claims 8, 10, 14, 16, 20, and 22 under 35 U.S.C. § 103(a) as being unpatentable over Bohan et al. (US 5,371,537).

As for claim 8, the Examiner asserts it would be obvious to combine the RAM LUT and the DAC disclosed by Bohan to arrive at the claimed limitation. Applicant respectfully disagrees. The proposed combination does not teach or suggest "setting a digital to analog conversion lookup table (DAC LUT) such that the intensity input at the maximum value for each color channel produces a maximum output of the DAC LUT and the intensity input at the minimum intensity value for each color channel produces a minimum output of the DAC LUT" as claimed. The claimed element is not a table driven DAC, it is the setting of a table driven DAC to its full range as part of the calibration process.

As for claims 14 and 20, Bohan discloses setting the data in the LUT is set such that each intensity input to the video frame buffer 61 is translated by the LUT into an arbitrary data value that has been determined to produce the desired output intensity on the screen when sent to the display device. Col. 5, lines 7-19. Bohan discloses that a maximum input (highlight) should produce an output somewhat less than the maximum. Col. 4, lines 3-26. Bohan discloses, "An important prerequisite of the present invention is that the monitor be initially adjusted (set up) to have a dynamic range that is wider than the dynamic range of the images to be displayed." Col. 4, lines 3-6. The present invention is distinctly different in that it adjusts the monitor to have a dynamic range that matches the dynamic range of the images to be displayed.

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As for claims 10,16, and 22, the Examiner asserts that it would have been obvious to take into account the refresh frequency of the display screen since Bohan points out that different monitors can be calibrated using the techniques disclosed by Bohan. Applicant respectfully submits that this does not teach or suggest what is claimed, namely testing the values provided by the sensor to determine the refresh frequency of the display screen. Merely being able to accommodate different refresh frequencies in not the same as actually determining what the refresh frequency is. Bohan discloses that the sensor must have an integration time sufficient to obtain low noise intensity reading and this time should encompass several CRT scan fields resulting in a multifield average. Col. 4, lines 62-65. Clearly such a sensor could not be used to determine the refresh frequency since the sensor is designed to be insensitive to the screen refresh.

Applicant respectfully requests that the Examiner withdraw the rejection of claims 8,10, 14, 16, 20, and 22 under 35 U.S.C. § 103(a) as being unpatentable over Bohan.

3. The Examiner rejects claims 2-5 under 35 U.S.C. § 103(a) as being unpatentable over Bohan et al. (US 5,371,537) in view of Alpert et al. (US 5,655,143).

Addressing claim 2, the Examiner asserts that Bohan shows the scanner having what can be considered a first (top) flange 82 and a second (bottom) flange 80, the first flange having a cylindrical core. Figure 5. Applicant respectfully disagrees. Webster's II New College Dictionary defines a flange as "a protruding rim, edge, rib, or collar." The portion of the scanner that the Examiner considers to disclose a flange 82, does not protrude and does not serve as a flange as described in the specification of the present invention. Further the Examiner describes the "flange" of Bohan as "having a cylindrical core." However, what is claimed is a top flange, a bottom flange, a cylindrical core section joining the top flange and the bottom flange. Bohan

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does not disclose a top flange joined to a bottom flange by a cylindrical core section. The Examiner points to the spool structure disclosed in Alpert as suggesting the claimed spooling of the cord. However Alpert discloses a spring driven storage reel for storing a cable within the housing of a PCMCIA card. This does not teach or suggest the cable storage arrangement of the present invention because one does not manually wind the cable around the spool disclosed in Alpert nor would it be possible to do so because the spool is not exposed to permit such use of the spool. Instead, Alpert discloses a spool that will rotate to wind up a cable inside a housing when the cable is released. One would not be motivated to combine the teachings of Alpert with Bohan because Alpert teaches management of a cable inside a housing and it is not apparent how one could combine that teaching with the scanner of Bohan that must be exposed to permit attachment to a display screen. Even if the teachings were combined the result would be a scanner with a mechanism that retracts and spools the cable and not the claimed sensor that merely provides a structure adapted to serve as a cable spool.

As for claim 3, applicant respectfully submits that Bohan does not show a top flange and therefore cannot show a top flange that is smaller than the bottom flange.

Considering claim 4, the Examiner asserts that it would have been obvious to provide a bottom flange that is transparent or translucent as a well known option and not of consequence. Applicant respectfully disagrees. The sensor is part of an optical system. It is necessary to visually place the sensor on the display screen. For example, Bohan provides an alignment sight 84 for this purpose. Col. 5, lines 37-49. Therefore, the construction of the bottom flange of a material with particular optical qualities is of consequence. Further, if the bottom flange were of rubber as suggested by the Examiner, the requirement of a transparent or translucent elastomer would be a significant design constraint and it cannot be assumed that such a choice would be

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made as a routine design choice. Indeed, the inclusion of an alignment sight on the scanner disclosed by Bohan would suggest that the rubber portion 80 of the suction cup assembly 79 is not suitable for purposes of aligning the scanner. Further, Bohan teaches away from the rubber portion being transparent or translucent by saying that the rubber portions are preferably a color, such as black. Col. 5, lines 26-27.

As for claim 5, the Examiner asserts that it would have been obvious to use plural suction cups instead of a single suction cup since it is not consequential to the overall operation, the consideration in question being the capability to affix the sensor to the screen. The Examiner asserts that a sealed fit is accounted for by Bohan, citing col. 5, lines 28-32. Applicant respectfully disagrees. There are further considerations beyond the capability to affix the sensor to the screen. The single suction cup provided by Bohan requires that the sensor be in a sealed assembly. As disclosed by Bohan, this introduces additional design requirements. Col. 5, lines 28-32. The use of a single large suction cup may require the use of a vacuum release valve as disclosed by Bohan. Col. 5, lines 35-36. The use of plural suction cups may permit a simpler design that does not require sealing of the sensor assembly or the use of a vacuum release valve. The Examiner has not addressed the claim element that provides "a light seal ... having a bottom surface that extends below the bottom surface of the suction cups." As disclosed in the specification, paragraph [0033], this arrangement of the light seal may create a push-pull relationship and provide a more consistent positional relationship between the sensor elements and the display screen. The use of the suction cup to provide a light seal as disclosed by Bohan may result in an attachment of the sensor that is inconsistent in both the distance between the sensor elements and the screen and the angle between the elements and the screen. Thus the elements of the claim are of considerable consequence to the overall operation.

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Applicant respectfully requests that the Examiner withdraw the rejection of claims 2-5 under 35 U.S.C. § 103(a) as being unpatentable over Bohan in view of Alpert.

Conclusion

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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Dated: 11/05/2004

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